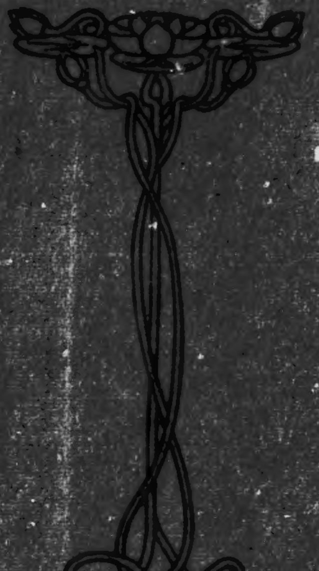
PROSPECTUS OF THE

WESTLAKE BRICK AND PRODUCTS CO.

LIMITED



WEST LAKE, ONTARIO, CANADA

A copy of this Prospectus has been filed with the
Provincial Secretary, Toronto.

PROSPECTUS

OF THE

Westlake Brick and Products Co., Limited

West Lake, Ontario, Canada

AUTHORIZED CAPITAL, $250,000.00

DIVIDED INTO

15,000 shares of 8% Cumulative Preference Stock
10,000 shares of Common Stock

Par Value of each, $10.00

Head Office, Wellington, Ontario, Canada
Factory and Works at Sand Banks, West Lake, Ont., Canada

OBJECTS OF THE COMPANY.

This Company is incorporated under the provisions of "The Ontario Companies Act" for the purpose of manufacturing, selling and exporting brick, lime and all other articles that can be manufactured of sand, lime or both.

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1915
no. 0038
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Statutory Information

(a) The incorporators and provisional directors of the company are: Norbert Hoffman, Buffalo, N. Y, stenographer; Grover Lauth, Buffalo, N. Y., salesman; Anna Catherine Patterson, Welland, Ontario, secretary; Hugh Alexander Rose, Senior, Welland, Ontario, Esquire, and Hugh Alexander Rose, Junior, Welland, Ontario, Barrister-at-Law, each of whom subscribed for one share.

(b) The necessary qualification of a Director is one share of stock and not in arrears in respect of any call. The directors may fix their remuneration subject to confirmation at a general meeting of the shareholders.

(c) The minimum subscription upon which the directors may proceed to allotment is one share of preference stock, payable ten (10) per centum on application and ten (10) per centum per month thereafter, until paid in full. L. V. Stevens will personally give a bonus of one share of common stock with each four shares of preference stock purchased and paid for.

(d) An agreement has been entered into whereby the company has taken over all options and property held by L. V. Stevens, in and about West Lake, Ontario, Canada, for the sum of nine thousand, nine hundred and ninety-five, fully paid shares of common stock.

(e) A fee of ten (10) per centum is now being paid for brokerage, which may be increased to twenty-five (25) per centum at the discretion of the directors; also $1,500 has been allowed for preliminary expenses of the company.

(d) There is no material contract except the said contract on options with L. V. Stevens, Buffalo, N. Y., copies of which may be inspected on any business day during business hours at the office of the Secretary-Treasurer, Wellington, Ontario.

(e) The directors have been chosen as follows:

Board of Permanent Directors.

E. B. Purtelle—Reeve of Bloomfield, Ontario.

H. W. Bedell—Owns large interests in Canning Factories, is also a Manufacturer of Tile and Brick, Picton, Ontario.

Col. Milton Adams—Mayor and Merchant of Picton, Ontario.

W. P. Niles—One of the largest growers and exporters of Seeds, Peas and Beans in Canada, Wellington, Ontario.

L. V. Stevens—The owner of the Properties, which have now been transferred to the company, Buffalo, N. Y.

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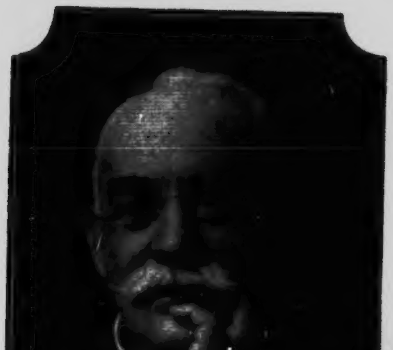

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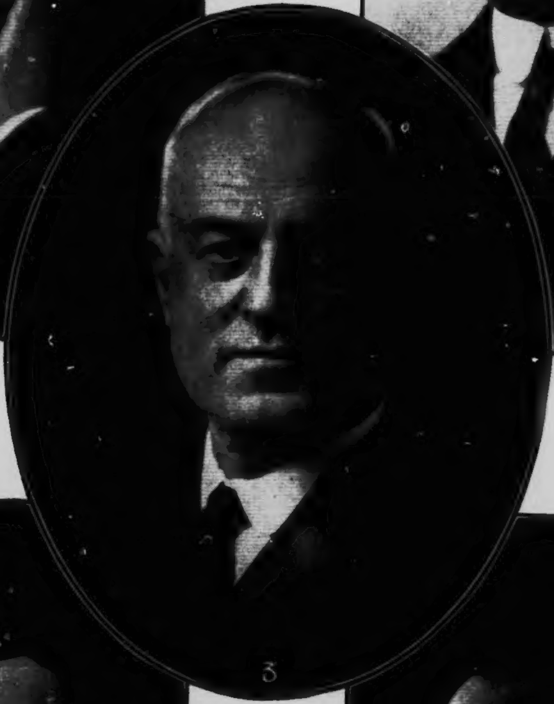

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L. V. STEVENS, President and Manager . 3

W. P. NILES, Secretary-Treasurer . . 1

E. B. PURTELL, Director 4

H. W. BEDELL, Vice-President . . . 2

MILTON ADAMS, Director 5

SAND LIME BRICK

How Made, the Demand and its Proven Worth

OUR PRODUCTS A NECESSITY.

One of the greatest problems that the human race has been called upon to solve, is the one now confronting it with regard to material for building.

The scarcity of lumber for building purposes is well known. At one time it was thought that the supply was inexhaustible and no more care or consideration was given to grades which we no longer see, than was given to the cheapest pine or white wood.

Long beautiful boards of clear walnut were used for shelves in the basement or milk house and frequently white pine served for kindling for the kitchen fire, or if it chanced not to be needed for use at that particular time, it was cast upon the bon fire in the annual clean up.

We will not enter into the dispute as to whether the supply of lumber is nearly exhausted or whether the shortage is attributable to the machinations of the greedy capitalist, but it is apparent to all that lumber is no longer a factor in the building line.

Again, if there is an abundance, the price is prohibitive and only those who are well to do or are willing to accept anything "Just so it is cheap," are building their structures of wood at the present time. The authorities in Canada are also contending against inflammable material for this purpose and have passed laws which will eventually drive wooden structures from all cities of size or note in the Dominion. The same restrictions are now in force in some of the cities in the United States and many more are beginning to take action on the subject.

It is distinctly apparent that building of wood is practically a thing of the past and a proper substitute has been the concern of architects and contractors for some time. Where it would come from, none could tell, but the belief that a Creator who had built a world so well, would not leave such an important enigma unsolvable, was deeply grounded in the hearts of all, and, therefore, it is not to be wondered at, that articles of great merit would be overestimated in such times of need and in a mistaken enthusiasm, place them outside their sphere. Hence, the failure next chronicled is not surprising.

THE SUBSTITUTE WHICH DID NOT SUBSTITUTE.

A cry went up with such a volume of intensity that a pleased world stopped amazed and gratified to hear of the great and wonderful discovery that would set at rest the fear of a dearth in building material for ages to come. Concrete, the phenominal commodity that would answer all purposes, was born. How the pent-up breath of thousands was allowed to escape and the contractor and architect sought their almost forsaken bed and indulged in one long and grand dream of peace and tranquillity.

But a test was made and buildings reared of the much mooted material. A few weeks elapsed and the trusted hireling crept noiselessly up to the bed of the sleeper and with a delicate touch born of deep solicitude, awakened the master to report that for the building of dwellings, concrete was a failure and had been condemned as unhealthy by the Board of Health.

Concrete is one of the greatest discoveries of modern times in its place, but its place is not in the walls of habitations. Its absorbtion is something tremendous and the dampness connected therewith makes it an impossible commodity for safe construction of buildings for living purposes.

Brick is the most logical material and even now the production can not meet the demand.

OUR PRODUCT COMPARED WITH CLAY.

In the making of bricks from clay, it is necessary to take a long time in their moulding and burning and it is almost impossible to get a uniform product, whatever care may be exercised. Parts of the kiln of brick, after days of burning, will be insufficiently cured, while in the same kiln a large number will be burned until they are worthless.

Sand Bricks are pressed and cured the same day, making an absolutely uniform product and one that can be marketed and laid in the wall at once.

Sand, lime and water are all that compose a **sand lime brick.** The lime is hydrated and the mix is made while the sand is ground. It is then pressed into proper shape and cured by steam pressure.

CLAY BRICK.

Clay brick, however, is a well known commodity in the building line. Its enemies have spat upon it and assailed it in many ways but it has had merit within itself. It lives and it will continue to live for ages and ages, improving and progressing as time goes on and will only be eliminated when the clay supply is exhausted. The achievements that have been wrought with high-class clay bricks, are almost miraculous and the observer will easily determine that the end is not yet.

To the uninitiated, a trip through the modern office of an up-to-date brick agency, will prove to him that advancement in this industry is not being neglected. Sample mantels with beautiful effects, columns massive and grand, charm while they educate and tend to impress the observer with the great possibilities of clay. But usually standing among the samples of brick and brought forth, only when the dealer is requested to produce it, is another of that family which is destined to work havoc among those who deal in this line of material for profit only. It costs little and therefore a stupendous gain is an impossibility. It is known as the SILICA OR SAND LIME BRICK.

SILICA BRICK.

There is some dispute as to whether **Silica Brick** is a product of German or English skill, but it is absolutely certain that more than three hundred years ago it was used by the Germans for building purposes and many of the buildings constructed by them at that time are standing now and are in an excellent state of preservation, rivaled only by the stone structures of that and other ages.

The manufacture at that time was crude in the extreme and did much to retard its progress, for, after the mixture had been prepared and pressed into shape, it was not available for use for one or two years, that length of time being required for it to cure or harden by exposure to the elements.

In the year 1867 General Howard constructed the Howard University at Washington, D. C., of this material and a remarkable edifice it is.

In 1880, Dr. Michaelias of Berlin, discovered that by exposure of the fresh brick to the action of steam, that which had taken months to accomplish, could now be accomplished in as many hours. Since this discovery, the advance in the manufacture of **Silica Brick** has been marvelous.

Winnipeg Union Station, costing 4,000,000 Dollars, five Union Schools in the same city, public buildings in Port Arthur, Tillsonburg, Waterford, Brantford and magnificent club houses and residences in Toronto, Ottawa and Montreal are built of this brick.

The United States shows her appreciation of the coming article in the brick line by erecting beautiful edifices in all of her principal cities, some few examples of which are: Hammerstein Opera House, Philadelphia, Pa.; First Methodist Church, 4th and Broadway, Oakland, Calif.; First English Lutheran Church, Oklahoma City, Okla.; Six story Bim Storage Building, Dayton, O.; Dela Rosa Grammar School, Colton, Calif.; Winney Building, Syracuse, N. Y.; Evangelical Church and Parsonage, Saginaw, Mich.; Beaver Board Plant, Military Road, Buffalo, N. Y.; Buick Motor Co., covering one-tenth of a mile in area, Flint, Mich.

There are seventy-one plants in operation in the United States with a yearly output of 174,000,000 and Canada produces 800,000 weekly from her twenty-seven plants.

The color of this brick in its natural state is a beautiful light grey resembling granite.

It can be made in any color, however, by adding mineral coloring in the mix, thereby insuring permanency, for by this process the coloring permeates every particle of the brick and colors all of the inner brick as it does the surface.

Some of the finest buildings that one could wish to see are erected of this colored brick in nearly all of the cities of both countries.

SAND LIME BRICKS TESTED.

In order that all doubts of the superiority of this brick might be dispelled, the following tests were made:

First, **Absorption**; the bricks were submerged in water for a period of ten hours and at the end of that time it was found that the absorption of the clay brick varied from 50% to 65%. The concrete was over 70%, while the sand lime brick absorbed but 15% moisture. This test was accomplished by weighing the absolutely dry brick and then weighing it again after the soaking.

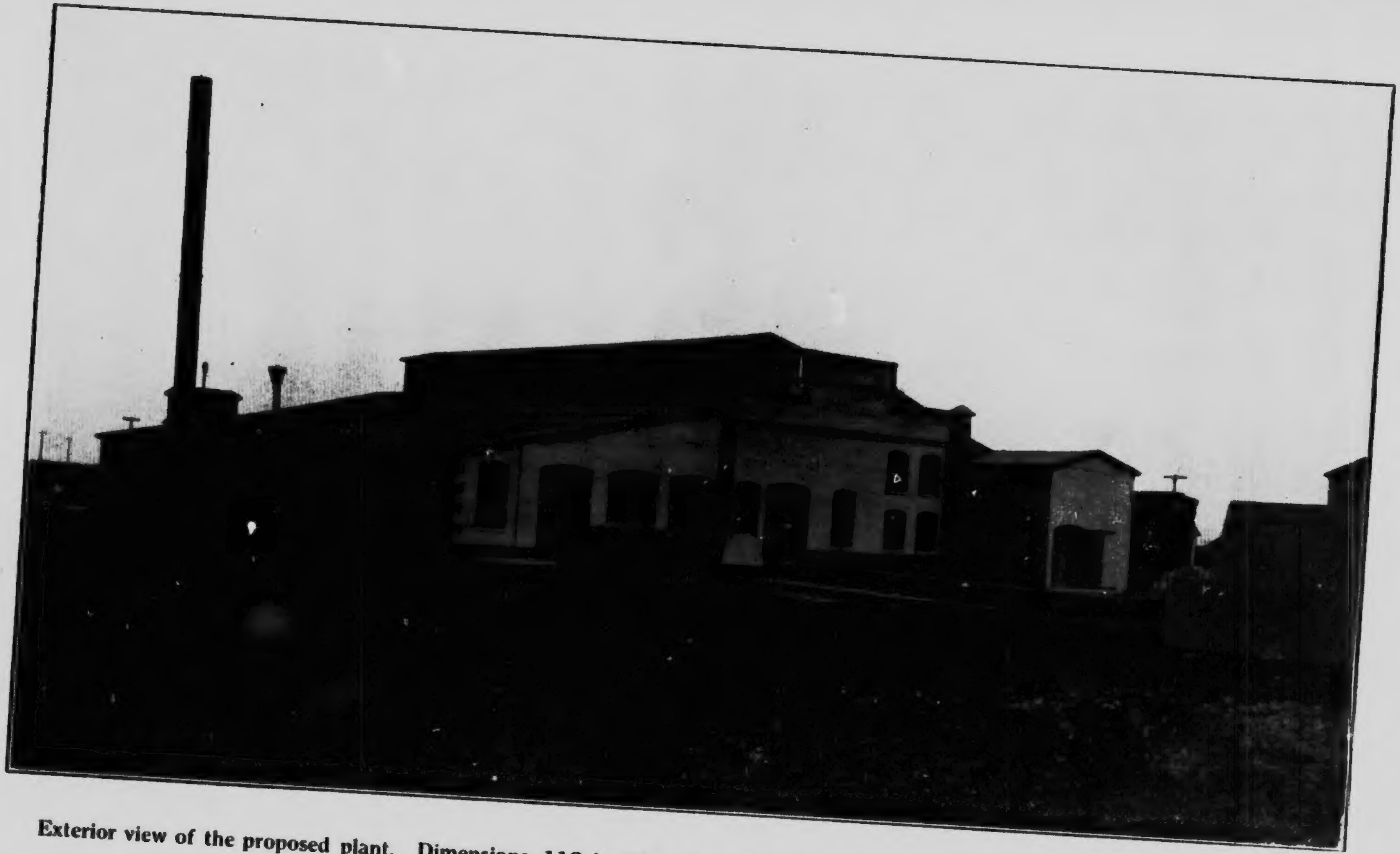
Second, **Stress**; a brick was taken by Professor A. Young, Faculty of Applied Science and Engineering at the University of Toronto on the 4th day of August, 1914, and submitted to the crushing test with the following results:

Mr. L. V. Stevens, Buffalo, N. Y.

Sir: Below are the results of crushing test on the brick left with Mr. Ritchie:

Area of brick	34.0
Crushing load	145,480 lbs.
Crushing stress	4,278 lbs.

(Signed) A. YOUNG,
Strength Laboratory, University of Toronto.



Exterior view of the proposed plant. Dimensions, 112 by 112 feet, giving ample accomodations for two complete units and the force of help necessary to operate them.

FIRE AND FROST.

In the Wellington Items of the Picton Times in the issue of April 2d, 1914, this test is recorded:

Mr. Stevens of Buffalo, one of the gentlemen composing the West Lake Brick Company, asked that a test be made as to the strength and durability of the Sandbanks' brick. The following test was made in Wellington:

A brick was soaked for ten hours in water, then taken out and allowed to freeze, after which it was thrown into a furnace and became red hot. Then it was taken out and at once thrown into a pail of water. Surely the test was a severe one. The tested brick can be seen today at the post office in a sound condition.

In the daily British Whig, Kingston, Canada, dated July 28, 1914, under the caption,

WELLINGTON IS ALL EXCITED

Over New Harbor and Manufacture of Brick.

This test is recorded and closes with these words: "The brick came through without a crack or scratch of any kind."

At Owen Sound a similar test, accompanied through its different stages, that is, part way through, by a clay brick, was made and after they had been frozen and thrown into the fire, the **clay brick** soon flew into hundreds of pieces, not one of which was the size of a hen's egg, while the **sand lime brick** was uninjured.

HARDENING OF LIME MORTAR IN SAND LIME AND BURNED BRICK MASONRY.

(Revus Des Materiaux De Construction Et De Travaux Publics.)

Paris, January, 1913.

About ten years ago when the sand lime brick industry began to reach the formidable dimensions which since then it has not ceased to enlarge, its adversaries opposed numerous objections to the use of this new material. They asserted that lime mortar would not harden in masonry executed in sand lime brick; they denied also the adhesion of mortar to these brick. These detrimental statements furnished occasion to the German Association of Sand Lime Brick Manufacturers to arrange practical experiments, to the end that they might demonstrate if and to what point these objections were justified.

The experiments began in November, 1905, were observed and controlled for six years, being executed on land belonging to the Royal Experimental Laboratory at Gross-Lichterfolde. Two walls were built, two meters, 6' 6") in length, two meters in height and 250 millimeters (10") in thickness, one of sand lime brick, the other of burnt brick. Lime mortar had been prepared under the control of the laboratory from one part of lime paste to three parts of sand by volume according to standard specifications. The materials, sand, lime and water were measured exactly. The masonry was executed between the 13th and 16th of November, 1905, by two experienced brick masons. These changed places every time that two courses of brick had been laid. They raised the walls with equal speed and used the same mortar. The top of the wall was covered with flat tiles laid in a bed of cement.

At stated intervals after four and eight months, one, two, three and six years, the wall was examined in the presence of representatives of the Minister of Public Works, of the Prefect of Police, and of the Union of Manufacturers. Several samples were taken of mortar and of the bricks from different parts of the wall. Care was taken to remove separately samples of mortar from the outer part of the joints and from the inside of the masonry. These samples sealed immediately in suitable boxes were immediately sent to the laboratory for examination.

The samples of brick were taken on each occasion from among the bricks in the top course. After carefully cleaning them from adhering mortar, they were immediately analyzed.

From these examinations they determined if the mortar had hardened and how much the hardening had advanced deeper into the masonry, if the mortar was dry or damp, and finally if and how it adhered to the bricks.

In a general way the result of these determinations were identical except on the point that on each succeeding visit the mortar had become progressively harder in the interior of the wall.

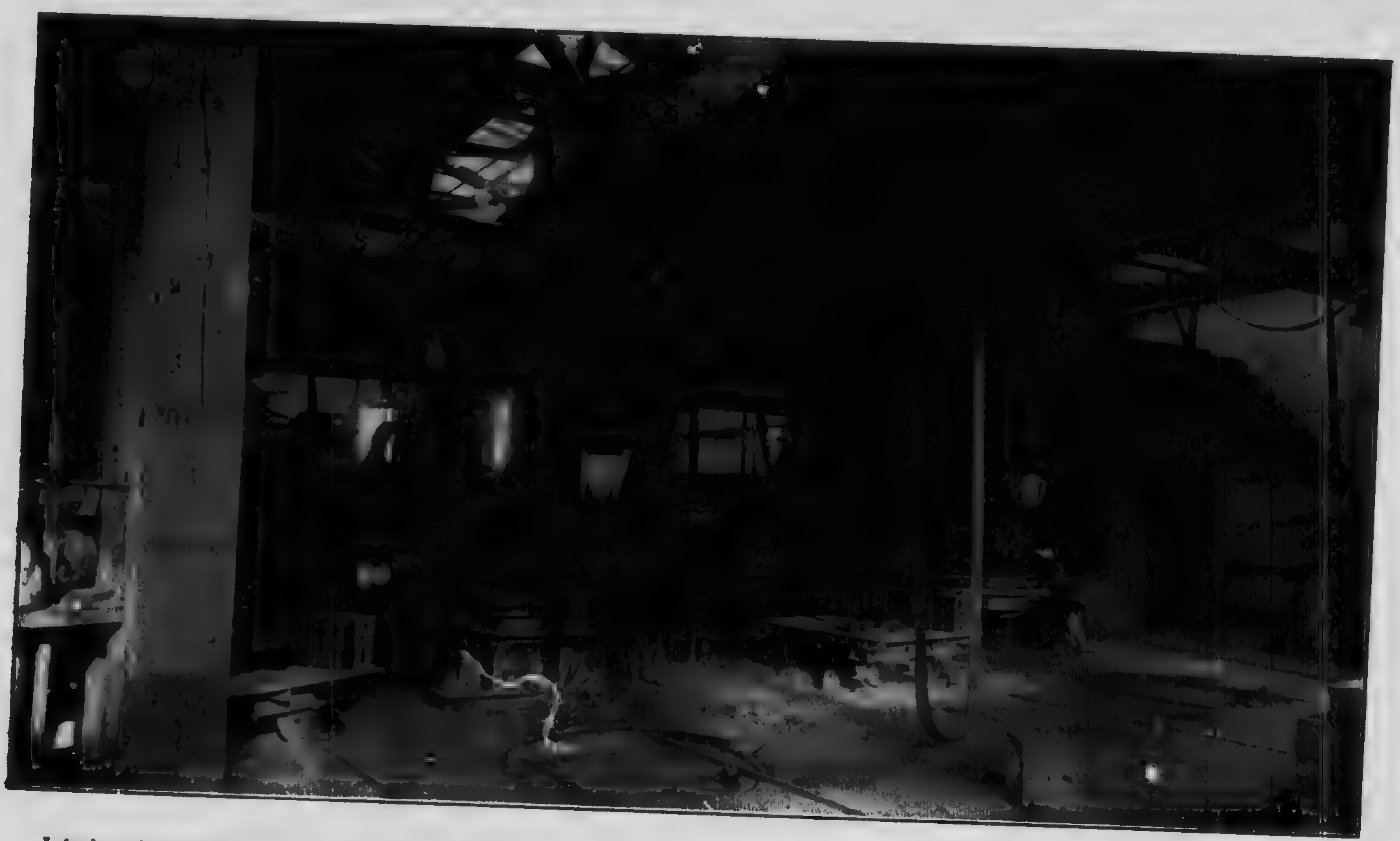
It is sufficient at the present for us to republish the report concerning the results of the last inspection in 1911. This report was communicated to the last meeting of the Association of Manufacturers of Sand Lime Brick and was published by the Tonindustrie Zeitung, from whom we quote these words.

In the wall made of sand lime brick the joints were almost always intact without exception. The alignment was nowhere altered. The mortar adhered well, only in a few cases particles of mortar had detached themselves.

As for the wall of burned bricks, the mortar had fallen from almost all the joints to the depth of 1½ centimeters, (½"). Only rarely were the joints left intact, that is, still filled with mortar, but in this case the mortar was found in the joints to be in a state of disintegration and no longer held to the bricks. It was easily picked out of the joints to the depth of 1½ centimeters.

In the sand lime brick wall the mortar had hardened well in the masonry to a depth of three or four centimeters, (1¼" to 1½"). Its adherence to the brick were perfect. The bricks could not be removed from the wall by hand. Beyond this hard crust and in the inside of the wall the mortar, although forming a compact mass, could be easily crushed to bits between the fingers. It adhered best to the bricks beneath the bed of mortar than to the bricks placed upon top of the mortar. It was dry enough, and only slightly moist in that part of the wall exposed to the west.

In the wall of burned brick the mortar wherever it had remained was hard to a depth of two or three centimeters, (about 1"). One could always easily detach the bricks from this hard crust, which in places had separated itself from the bricks. In the interior the mortar



Interior view showing the ROTARY PRESSES, each capable of producing 22,000 first class bricks per day. 16 bricks are pressed at every rotation of the circular table, which is plainly seen.

was soft and pliable. As in the wall of sand lime brick the mortar adhered better to the upper face of the brick than to the lower, but also in this last case, its adherence was often perfect as was shown upon removal of the brick. The mortar was always fairly damp, drier only in the lower courses of the masonry.

As we have said, the result of earlier inspections were the same with always this difference that the thickness of the hardened crust of mortar increased as the duration of the experiment grew longer. Aside from that the results were identical. Good hard mortar on the outside, the mortar showing no marked hardening in the interior. It was dry enough in the sand lime brick wall and set into flat plates which could be drawn from the joints in the other wall, in which it was soft and damp. The dampness was only a little more appreciable in the upper part of the wall. One new observation was made during the last inspection. The mortar had fallen from the joints almost everywhere, and had separated itself from the burned brick; while completely filled the joints of the sand lime brick wall and usually remained adhering to the bricks. In consequence of this the sand lime brick set better in their mortar bed than the burned bricks, and were more difficult to remove. Before showing the results of the analyses we may remark in passing that at the beginning of the experiment the densities of both bricks were determined and were found approximately equal for the two.

The results of the analysis show first the degree of moisture in the bricks and, secondly, the degree of the moisture of the mortar and its content in carbonic acid, as shown in the tables below. We can report that the degree of moisture was always lower in the burned brick than in the sand lime brick. This result is surprising because sand lime brick generally do not absorb more water than clay brick, and, further, the density was the same for both kinds.

Values the mean of three experiments.

MOISTURE OF BRICKS.

Kind of Brick	Time	Weight of Brick in Wall	Weight of Dry Brick	Moisture Kilos	Moisture Per Cent.
Burned	4 Mos.	4.074 kg. m.	3.847 kg.	0.237	5.6%
"	8 Mos.	3.638	3.414	0.244	6.6
"	1 Yr.	3.688	3.423	0.215	5.9
"	2 Yrs.	4.041	3.831	0.210	5.2
"	3 Yrs.	3.984	3.802	0.182	4.8
"	6 Yrs.	3.963	3.848	0.115	3.0
Sand Lime	4 Mos.	3.939	3.736	0.303	5.4
"	8 Mos.	3.989	3.738	0.160	4.3
"	1 Yr.	3.633	3.441	0.198	5.6
"	2 Yrs.	3.681	3.437	0.244	7.1
"	3 Yrs.	3.609	3.339	0.270	6.5
"	6 Yrs.	3.674	3.433	0.241	6.6

The results of analysis of the mortars are collected in the following table:

MOISTURE AND CARBONIC ACID IN THE MORTAR.

Age of Wall	Masonry of Burnt Brick		Masonry of Sand Lime Brick	
	% Moisture	% CO_2	% Moisture	% CO_2
8 Mos.	5.00	3.77	1.67	4.83
1 Yr.	3.00	4.60	1.11	5.83
2 Yrs.	3.91	0.40	0.57	6.39
3 Yrs.	4.29	7.39	1.75	7.53
6 Yrs.	5.84	7.6	2.86	7.72

Samples from inside of wall.

8 Mos.	6.65	0.34	1.86	0.46
1 Yr.	7.48	0.77	1.03	0.70
2 Yrs.	6.70	1.10	2.21	0.74
3 Yrs.	6.82	1.80	2.31	0.76
6 Yrs.	8.70	0.96	3.86	1.03

Figures show that the moisture in the mortar is sensibly higher in burned brick masonry than in the wall of sand lime brick; although the moisture is very different in the two walls, the progressive march of mortar hardening is absolutely parallel. The content of carbonic acid in the mortar is at each epoch almost the same in the two walls.

In concluding we can infer in a general way that the mortar has hardened to the same degree in the two walls. As for the adhesion of mortar to the bricks no sensible difference has been determined. We may then conclude that lime mortar behaves identically in sand lime brick masonry and in structures of burned brick, and the question of hardening and the adhesion of lime mortar in sand brick masonry which has so long disturbed those interested may be considered definitely and favorably settled.

(Copied without corrections from publication mentioned above.)

OUR PROCESS.

The name of the brick signifies the ingredients necessary for its manufacture with the exception of the moisture. Sand, Lime and Water are the only materials used.

The sand should be very clean and sharp. The cleaner the sand the better the results, for clay, muck and other substances of a like nature will not unite properly with lime and they are, therefore, a detriment in the mixture. The brick may be made from coarse or fine sand provided that it is good and sharp. The stress of a coarse sand is somewhat in advance of the finer, but this is more than offset when the finer is used, by the cleancut corners and edges and by the smooth even surface.

The lime necessary should be a high grade calcium product. Magnesia in any considerable quantities, is injurious and softens the brick. The lime must be hydrated to as high a state of perfection as possible for the raw lime is liable to hydrate after it is made into brick and cause it to crack.

If care is taken, the hydrating process is easy and to obviate any possibility of free lime after hydrating, the hydrated product is ground by itself first, and afterward in unison with the sand in the wet pan. It is then pressed into bricks automatically and hardened under a steam pressure of from 125 to 150 pounds for ten hours after which it is ready for the market.

Interior view showing the WET PANS, partially beneath the surface. The immense stones which are visible produce a mixture superior to any other method known. They revolve much faster than the ordinary grindstone.

THE MATERIAL.

Having satisfied all but our competitors, who see in this later product, a rival which they have just cause to fear, attention is now called to the materials.

Riding in our motor boat across one of the most beautiful lakes in the Dominion, looking down into its clear blue waters, one is convinced of its depth without further experiment. But when the line is dropped and a depth of 20 feet is indicated in many places, and 12 feet in depth is shown within 20 feet of our shore, one realizes at once that with such a valuable supply of fresh water as can be obtained in our lake, about 21 miles in circumference, our water supply is really a great asset within itself. No streams running dry around our place of business, no costly artesian wells are needed and there is no lack of the purest of water for domestic purposes.

The chief commodity in the manufacture of brick is sand.

Silica in abundance is the greatest factor and, therefore, while brick of poor quality can be made from silica, mixed with soil, clay and other refuse, a good, sharp, clean, fine sand is idealistic for a splendid smooth face brick. The following analysis shows the quality of our material.

Sand

Silica	
Oxide of Iron	72.76
Alumina	1.70
Magnesia	10.96
Manganese	1.20
Lime	Trace
Potash & Soda	7.87
Carbon Dioxide & Water	1.03
	4.48
	100.00

As regards quantity, the Government concession to us is three and one-half miles in length with an area of 502 acres, while the private property owned by the company by purchase and option contains a table land about three quarters of a mile in width and over one mile in length, with an average height of probably 40 feet. We are informed that outside the large deposits of Japan, ours are the largest sand hills in the world.

Our estimates are based upon the purchase of our lime, because lime, to be available, must contain a large percentage of calcium and not over 2½% magnesia. The following formula, however, taken from the same strata of rock as that on which our factory will stand, shows the possibility of a great reduction in the cost of lime.

Burnt Lime.

Insoluble	2.78
Oxide of Iron	1.88
Lime	81.96
Magnesia	.94
Sulphuric Acid (Sol)	.68
Carbon Dioxide	10.08
Moisture	1.05
Phosphates	.62

OUR FIELD.

It frequently happens that the best of intelligence is not exercised in locating a plant. The directors are biased in their judgment by selfish desires and as a consequence, materials are brought to the plant instead of having the plant situated near the materials. In instances innumerable this is the sole cause of failure. There are a number of brick plants so located that their market is limited and if the demand is not sufficient in their particular territory, they suspend business. One of the best clay brick plants in the Dominion today is so located that it fails to make expenses. It is true that it has no competition, but neither can it give competition. The expense necessary to market its product is so great that it can not meet its competitors.

Our plant will locate on our private property as closely as possible to our Government grant. This insures us material with little effort for a large number of years. Our dock will extend immediately in front of the factory and receive the product as finished. In less than one hours' time, our boat is out of our harbor upon the waters of the Great Lakes, accessible to territory occupied by over ten millions of people. Charlotte, N. Y., is but 49 miles away, while the canal at Oswego, 57 miles from the entrance to our harbor, is a direct waterway into the City of New York. This enables us to meet all fair competition upon a fair basis and competition for extermination has no chance in the world. While we are holding our own in a contested market, a market where competition could not exist, sustains our position. This is already recognized by some of the large brick interests in both Canada and the United States and is causing them considerable concern. **Railroads can never compete with an old scow and a tug, and our bricks are not sensitive as to the mode of their transportation.**

Interior view of the immense cylinders or COOKING OVENS. Cars with 1000 fresh bricks are pushed within them and, after 10 hours under high steam pressure, the bricks are removed fully cured and ready to lay in a structure.

EQUIPMENT.

Our plant will be equipped with all essential machinery of the latest type and highest design. No inducement will persuade us to add any extras unless it has been proven that they will save sufficient time and material to pay for their purchase and upkeep. We will be governed in our selection by the results obtained by machines now in use or by a complete guarantee of their ability to accomplish that which is expected of them. Each single unit shall be required to reduce the raw material from its outdoor condition to perfectly cured bricks in quantities of 22,000 for each day's run, except, of course, in case of serious accident. In purchasing, preference will be given to those firms located nearest our plant so that repairs will be readily obtainable.

Under no circumstances will mistaken economy be allowed to restrict us to the extent of deteriorating our product which must be of as high a degree of perfection as it is possible to obtain from our superior materials.

The policy of the company, at all times, shall be to reach the highest standard and maintain it, even though to a casual observer it may seem that some economy is sacrificed thereby. **A customer this year must be a better customer next year.**

POWER.

In considering the different requisites of the plant, the question of Power is no more confusing than have been the case in any other essential part. We may choose Electricity, Coal or Oil for each are available at a minimum of cost.

The largest supply of coal for Toronto is brought from the docks at Oswego and we are nearly across the lake from this port, the distance being but 57 miles. The advantages to us for steam are thus very apparent. The Hydro Electric is in operation in Trenton and I am assured it will be extended to Picton within the next twelve months. Our plant has been a great incentive to the hastening of this supply.

By a run of only 49 miles, we can reach Charlotte, where fuel oil for operating our plant can be readily obtained. A remarkably low figure has been given us upon oil F. O. B. Charlotte. The cost of transportation in both instances of coal or oil is reduced to the minimum by the fact that the required commodity can be brought across the lake upon a return trip.

DOCKAGE.

One of the most interesting auxiliaries of the plant is the **dockage.** Owing to the absolute seclusion of our harbor and the depth of water near the shore, there are no intricate problems to solve in this direction. It seems almost incomprehensible that with all the other advantages for erecting our plant and manufacturing our product, nature should still continue her gratuities and offer us opportunities for shipping greater than those at almost any other point upon the great lakes. Our dock built directly in front of our plant and acting as a platform thereto, may be constructed in the simplest manner and with very little expense. The water within 20 feet of the shore is 12 feet deep and there is a natural turning basin sufficiently large for any of the Great Lakes boats. And further, we are completely sheltered from the wildest storms upon the larger lake by our vast sand hills rising to great heights within a few rods at our left. While a tempest is raging upon Lake Ontario, our loading goes peacefully on.

LOADING CONDITIONS.

With such a dock as the one just described, how could our **loading conditions** be other than simply ideal. There are no sheds required. Our scow stands at the dock and with a device entirely our own, the bricks, fresh from the cylinder, are assorted as soon as they are sufficiently cooled and carried 500 at a time to their place of transit. The device for loading is merely an overhead rail with cross rails. Carrying our platform upon these we are enabled to pack our load close together without repacking and when the hatchway is closed, the shipment is amply protected for long journeys. Any brick man will appreciate what it means to be able to eliminate multiple handlings.

ESTIMATED COST PER THOUSAND.

It is estimated that in operating a Two Unit Plant for 250 days of 10 hours each, in each year, that the cost of Sand Lime Brick will be Three Dollars and Ninety cents ($3.90) per thousand.

Owing to cheap transportation by Scow, we can deliver Bricks to our purchasers for not to exceed Two Dollars ($2) per thousand, or, in other words, we can deliver Brick to our Customers at Five Dollars and Ninety cents per M, leaving a net profit of Two Dollars and Ten cents ($2.10) per thousand.

On the above basis of Operation we would Manufacture about Twelve Million Bricks per Annum, at a profit of say Two Dollars ($2) net per thousand, thereby showing a profit of Twenty-Four Thousand ($24,000.00) per Annum.

The above figures are arrived at after a most careful figuring on cost of Manufacture as well as transportation, and from actual costs received from a number of manufacturers, in the United States and Canada, none of whom are so well situated as we will be for economy of operation or transportation.

Owing to our favorable location, we will be in a position to reach all Lake and River Ports, including Ogdensburg, Oswego, Sodus, Syracuse, Rochester and Buffalo, in the United States, as well as Montreal, Cornwall, Prescott, Brockville, Gananoque, Kingston, Napanee, Deseronto, Belleville, Trenton, Brighton, Colborne, Coburg, Port Hope, Bowmansville, Oshawa, Whitby, Toronto, Hamilton, St. Catherines, Welland, etc., in Canada, thereby placing us in touch with a larger market than any Fatcory depending upon strictly rail transportation can possibly have.

CONCLUSIVE AND INDISPUTABLE.

And finally, after years of every test that a government board would give to such matters, The Illinois State Geological Survey, with the Governor of the State at its head, came out with a nice cloth bound book of 83 full pages, covering all tests, analyses, and a complete comparison of all materials. After all was considered separately the following summary was added.

SUMMARY.

In appearance, sand-lime bricks are very pleasing. Their color varies from a pure white to a dark gray. Where colored sands are used in mixtures from which they are made, brown, red and other colored bricks may be produced. The bricks may also be colored by an admixture of various kinds of coloring matter, or by precipitating coloring material within their pores. In cases where artificial coloring is to be practiced, it is essential that the sand used in making the bricks be of such a character as not to interfere with the color. It should, preferably, be fine and white.

Sand-lime bricks are very uniform in size and shape. They are larger than the ordinary clay bricks owing to the fact that they do not shrink on hardening, and therefore fewer are needed for the construction of a given mass of masonry. Again less mortar is required in laying the sand-lime bricks because of their regular shapes, and masons can work more rapidly with them because no time is required to select the best face for the outside of the wall.

From a careful consideration of all information at hand, the conclusion seems to be warranted that sand-lime bricks have successfully withstood every reasonable test required of them, and that the future of the industry in this country is assured. Replies received to circular letters sent out to the trade show that most manufacturers are prospering and that the prejudice always found to exist against a new building material is being gradually removed.

The future of the industry demands that a good, reliable product be put upon the market and at a reasonable price. In order that this may be done, it is essential that care be exercised in the location of manufacturing plants. The prospect of securing a ready market and of having at hand an abundant supply of good sand should weigh heavily in the final selection of a site.

The character of the sand should be taken into **consideration in** the selection of the process to be used in the **preparation of the** mixture of sand and lime. For the sake of economy **in the use of** lime, and in order to promote strength, and to reduce **absorption in** the finished bricks, the percentage of bonding **material should not** be very much in excess of that required to unite thoroughly the sand grains into one compact mass; or, in other words, should be just enough to fill the voids in a properly proportioned mixture of fine and coarse sands.

It has been shown that the bond of a sand-lime **brick is a** mixture of silicates of calcium, and that the simple calcium **meta**silicate or hydrometasilicate ($CaSiO_3$ or $CaSiO_3\ H_2O$) is the principal compound of this mixture. Other silicates, as stated on page 59, must also be present in small, variable amounts, dependent on the conditions of manufacture of the bricks.

Sand-lime bricks have repeatedly passed satisfactorily all the tests recommended for building bricks by the American Society for Testing Materials. The effect of heat upon them has been shown to depend upon the temperature to which they are subjected, a red heat causing the bond to break up, while a white heat causes recombination. Enough work has been done along this line to warrant the statement that for all ordinary purposes sand-lime bricks afford a safe and reliable building material.

STOCK.

To purchase the property under option and to option other property, the necessary machinery for operating the plant and the boats required to move our product, the company will issue and have for disposal 15,000 shares of preference stock, of a par value of $10.00 per share. A stock commission of 25%, that is one share of common stock, will be given with each four shares of preference stock purchased. There is a fixed cumulative preferential dividend of 8%, payable out of the net earnings of the company in preference to the dividends payable on the common stock, with the right to repayment of capital and any accrued dividends in priority to common stock.

Dated this February 1 , 1915.